Rust fungi on *Veronica*

Puccinia veronicae-longifoliae is a microcyclic rust that has not been established in the United States although it was found in Michigan in early 2005. In addition it has been intercepted several times at ports of entry to the U.S. on ornamental species of *Veronica*.

Puccinia veronicae-longifoliae Savile, Can. J. Bot. 46:635. 1968

Spermogonia, aecia and uredinia unknown.

Telia: hypophyllous, forming chlorotic, depressed area on upper side of leaf, subepidermal, erumpent, round, cushion-like, 1-2 mm diam, cinnamon brown, surround by ruptured epidermis; teliospores ellipsoidal to oblong, rounded or attenuated at both ends, constricted at septum, 28-55 × 12-22 µm, chestnut-brown, yellowish, to nearly colorless; walls smooth, 0.8-1.5 um thick at sides, apex 5-12 µm thick; pedicel hyaline, persistent, up to 60 µm long.

Hosts: *Veronica longifolia* L., garden speedwell, and *V. spicata* L., spiked speedwell (Scrophulariaceae)

Geographic distribution: Europe including Finland, Germany, Latvia, the Netherlands, Sweden, United Kingdon; and northeastern China.

Of the five common species of *Puccinia* on *Veronica*, three occur in North America as well as Asia and Europe, namely *P. albulensis* Magn, *P. rhaetica* E. Fisch. and *P. veronicarum* DC. *Puccinia rhaetica* has ellipsoid or clavate teliospores with distinctly rugose walls. The other two species, *P. albulensis* and *P. veronicarum*, have smooth to only minutely rugulose, broadly ellipsoid teliospores. *Puccinia albulensis* has teliospores up to 35 µm with walls uniformly thick, 1-1.5 µm (Arthur 1934), and *P. veronicarum* teliospores up to 55 µm and apex up to 12 µm (Zhuang, 1992). *Puccinia veronicae* J. Schröt. has smooth, fusoid to clavate teliospores less than 50 µm long, apex 5-7.5 µm, and is known only from Eurasia (Savile, 1968; Zhuang, 1992). *Puccinia veronicae-longifliae* has long, up to 60 µm, smooth teliospores with apex up to 12 µm thick.

When Savile (1968) treated rusts on Veronicaceae, he distinguished two types of teliospores for many of the species, leptospores and resting spores. Usually resting spores are shorter with darker walls, and the leptoform teliospores are longer with paler walls that germinate without undergoing dormancy. In *Puccinia veronicae-longifoliae*, the two types intergrade.

References:

Arthur, J.C. 1934. Manual of the Rusts in the United States and Canada. Purdue Res. Found., Lafayette, Ind., 438 pages.
Savile, D.B.O. 1968. Species of *Puccinia* attacking Veroniceae (Scrophulariaceae). Canad. J. Bot. 46: 631-642.
Zhuang, J.-Y. 1992. Notes on Chinese species of *Puccinia* parasitic on Scrophulariales. Mycosystema 5: 135-153.

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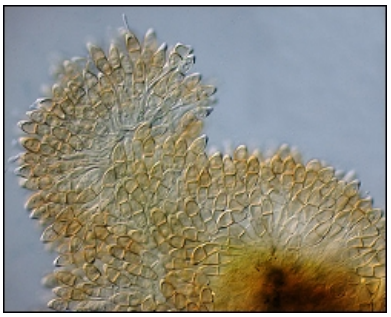

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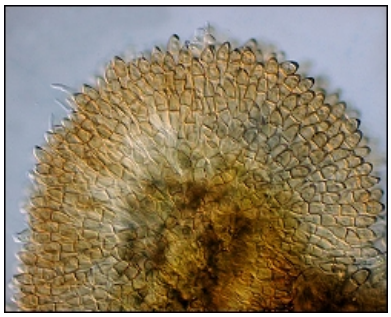

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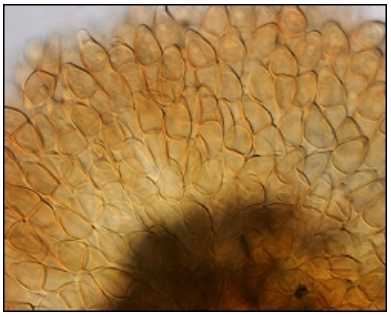

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